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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In re:

Implementation of Section 17
of the Cable Television Consumer
Protection and Competition Act of
1992

Compatibility Between
Cable Systems and Consumer
Electronics Equipment

ET Docket No.
93-7

SUMMARY OF ARGUMENT

The Commission's attempts to increase compatibility between consumer electronics equipment and cable security technology must recognize that no single approach will provide a "100%" solution to every compatibility problem. The Commission should recognize, however, that many compatibility problems can be solved now to a large degree with existing technology, and in ways that are consistent with the need to prevent signal theft.

As Congress has recognized, cable piracy harms cable operators, cable programmers, franchise authorities and, ultimately, law-abiding subscribers. In addition to economic harm, cable operators often bear the brunt of subscriber frustration and confusion over the actual compatibility of newly purchased TVs and VCRs. Often this confusion arises because consumer electronics sales personnel and retail advertising inaccurately exalt the compatibility of a certain model of TV or VCR with cable.

The demand for increased programming, increased channel capacity and new marketing approaches such as Impulse Pay-Per-View make addressable scrambling the most attractive security technology to cable operators. In addition, the 1992 Cable Act's "must-carry" and "anti-buy through" provisions may make addressable scrambling the only technology flexible enough to allow cable operators to meet these obligations. Other security techniques such as trapping or interdiction are either too limiting or have not been adequately tested in the real world to be considered realistic widespread alternatives for the post 1992 Cable Act world.

The Commission's rules should address existing TV and VCR deficiencies that must be overcome if a product is to bear the label "cable ready" or "cable compatible." Improved tuner performance, increased Direct Pickup shielding and the inclusion of the ANSI/EIA 563.x Decoder Interface Connector are among the most important elements that a "cable ready" or "cable compatible" TV or VCR should feature in order to carry either of those designations into the marketplace. Every TV or VCR should carry a label that tells consumers the number of cable channels that piece of equipment tunes.

Because of the continuing likelihood of customer confusion, products that do not conform to the Commission's requirements for a "cable ready" or "cable compatible" TV or

VCR should not be able to tune cable channels, only broadcast channels. Customers have become conditioned to the idea that any TV with over 100 channels is "cable friendly."

The cable industry is willing to commit to making available -- at a reasonable cost -- optional set-top devices that can correct many of the compatibility problems highlighted in the legislation. While not "100% solutions," the improved compatibility offered by these devices certainly qualify as "80%" or "90%" solutions.

The Commission should defer acting on advanced technologies, such as Digital Video Compression, in this proceeding. Congress has specifically recognized the Commission's ability to revisit these issues as necessary. The Commission's rules should take effect 18 - 24 months following the date they are issued, except for TV and VCR labelling requirements. These should take effect within 3 - 6 months.

While the Commission's main objective at this point in the proceeding is to gather as much information as possible, it should not lose sight of several fundamental precepts. Subscribers purchase programming, not electronics. Cable operators must protect that programming to protect their own economic interests, and those of programmers, franchise authorities and authorized subscribers.

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To the Commission:

**COMMENTS OF
THE NATIONAL CABLE TELEVISION ASSOCIATION, INC.**

The National Cable Television Association, Inc. ("NCTA"), by its attorneys, hereby submits its Comments in response to the Commission's Notice of Inquiry^{1/} regarding implementation of Section 17 of the Cable Consumer Protection and Competition Act of 1992.^{2/}

Introduction

Section 17 of the 1992 Cable Act requires the Commission to report to Congress "on means of assuring compatibility between televisions and video cassette

^{1/} Notice of Inquiry, ET Docket No. 93-7, FCC 93-30 (adopted January 14, 1993, released January 29, 1993) ("NOI").

^{2/} Cable Television Consumer Protection and Competition Act of 1992, Pub. L. No. 102-385, 106 Stat. 1460 (1992) (the "1992 Cable Act").

recorders and cable systems, consistent with the need to prevent theft of cable service[.]" In addition, the Commission must issue regulations setting forth when and how cable systems may scramble or encrypt their signals.^{3/}

Congress has directed the Commission, in promulgating these regulations, to consider (i) the costs

functions of their TVs or VCRs.^{5/} Third, to the extent technically and economically feasible, cable operators must offer subscribers the option of having signals delivered directly to their equipment without passing through a converter box. Fourth, the rules must promote the commercial availability of converter boxes and compatible remote control devices. Fifth, cable operators that rent remote control units must notify their subscribers that they may purchase a remote control device rather than renting it from the operator (and, further, must specify the types of remote control units that are compatible with the converter box). Finally, the rules must prohibit a cable operator from disabling a converter box so it does not work with a commercially available remote control.

The issues raised in this proceeding are of great importance to the cable industry and its subscribers. None, however, is more important to cable operators than the rules that will specify those technical requirements that a TV or

^{5/} Throughout these Comments, the term "converter" or "converter box" is used to denote a device that performs a number of functions for the subscriber, principally eliminating direct pickup interference ("DPU") due to improperly shielded components in a TV or VCR. While converters were originally developed to solve the DPU problem, the converter's tuning function evolved as cable channel capacity grew beyond that tunable by most TVs and VCRs. In these Comments, the term "converter/descrambler" is used to indicate a device that performs these functions and allows subscribers to view scrambled or encrypted programming.

VCR must comply with in order to be sold as "cable compatible" or "cable ready." In defining these terms, NCTA strongly urges the Commission to consider the potential for evasion by those who would simply use other euphemisms to imply that equipment is "cable friendly." Congress cannot have meant to simply eliminate the words "cable ready" and "cable compatible" from the lexicon and permit any other deceptive inference to remain untouched. The Commission's rules must attack the problem, i.e., customer confusion, by taking steps to eliminate the cause of that confusion, no matter the particular marketing nomenclature or sales practices employed.^{6/}

In order to better assist the Commission in the difficult task of preparing a Report to Congress on the complex issues involved, the NCTA has created a special task force under the stewardship of Mr. William J. Bresnan, President of Bresnan Communications and a longtime leader in the cable industry. The companies involved in this task force, including representatives from the Cable Television Laboratories ("CableLabs"), have been working with the

^{6/} Prohibitions against labelling sets as "cable ready" where real compatibility is lacking will only address part of the issue. The manufacture of equipment that "appears" to be compatible although it does not meet technical compatibility standards would continue to be problematic. Customers long conditioned by electronics store salespeople will continue to believe that any set with 100 or more channels is "cable ready."

Electronics Industries Association ("EIA") to discern common resolutions of these complex issues whenever possible.

The NOI asks for information on a wide variety of topics related to the compatibility issue. NCTA, through these Comments, seeks to provide information -- as well as context -- responsive to the NOI. Following a general discussion of the issues involved, the Comments will address the Commission's specific questions, the answers numbered to correspond to paragraphs within the NOI.^{7/}

I. Cable Operators Should Be Afforded Maximum Flexibility In Determining Which Security Measures Best Protect Valuable Programming and Satisfy Subscriber Compatibility Demands.

As an initial matter, the Commission must recognize that there is no single method of signal security which currently presents a 100% solution to every compatibility problem facing subscribers and cable operators. NCTA encourages the Commission, therefore, to approach this proceeding with an appreciation for "situational" solutions that fix most of the problems while not creating any additional ones. While these "80%" or

^{7/} In addition, NCTA and the Consumer Electronics Group of the Electronic Industries Association ("EIA/CEG") today file joint comments responsive to those questions raised in the NOI that require information from both industries. See NOI at 6, n. 15. As noted in the joint comments, the cable and consumer electronics industries have distinct and not always "compatible" points of view on these issues. The Commission should consult the comments of EIA/CEG, as well as its members, for a complete understanding of all points of view on these issues.

"90%" solutions may not provide a fully "transparent" signal delivery system, they will improve compatibility and allow consumers to regain the use of many of the extended features of their TVs and VCRs.^{8/} As the Commission understands, Congress carefully drafted Section 17 to incorporate the concept of "balancing" an interest in achieving compatibility with necessary accommodations for signal security.

A. The Commission Must Recognize
That Subscribers Benefit from
the Presence of Signal Security.

Since its inception, cable television has thrived on its ability to provide subscribers with programming services that were not available to them off-air. As technology advanced and cable began to innovate with new programming ideas and formats, consumers benefitted from their access to even more choices. Initially, cable converters were introduced as a means for providing clear signals. Later equipment enabled the delivery of channels that could not be tuned by consumer TV receivers. Added

^{8/} For example, utilization of a converter/descrambler with an RF By-Pass will permit a subscriber to watch one scrambled channel while simultaneously taping an unscrambled channel. Similarly, converter/descramblers that contain a timer will allow subscribers to sequentially tape a program

conveniences, such as remote control units, were also introduced.

As the pool of programming continued to expand, cable operators also developed the means for packaging programming and permitting a level of subscriber choice among "tiers" of service. The ability to select among levels of service provided subscribers a greater opportunity to control which programming and how much programming they received. Those opting for a more limited package would not need to pay for services they did not receive. The opportunity for program selectivity is achieved through the use of various means for controlling access to individual and/or groups of channels. These techniques, often used in conjunction with specially designed converters, provide the backbone for realizing consumer choice.

The unauthorized reception of cable television causes significant economic harm to cable operators, cable programmers, franchise authorities and, ultimately, authorized cable subscribers. As the Commission notes in the NOI, service theft is estimated to result in over \$4.7

billion in unrealized revenue annually, almost 24% of gross industry revenue in 1991.^{9/}

Other parties suffer as well. In addition to cable operators, piracy hurts cable programmers because

Ultimately, authorized subscribers suffer because they subsidize their dishonest neighbors' viewing. In addition, authorized subscribers pay for the large investment that each cable operator must make in signal security, whatever the technological means employed. It will come as no surprise, therefore, that the cable industry is engaged in a continuing technological battle with cable thieves over signal security.^{11/}

B. Congress Has Recognized the
Importance of Having
Secure Cable Programming Transmissions.

In both major pieces of cable legislation passed to date, Congress has recognized the severe negative consequences of signal theft on the cable industry and cable subscribers. Section 633 of the Cable Communications Policy Act of 1984^{12/} created both criminal and civil penalties for the illegal interception or reception of cable signals. The 1984 Cable Act imposes even more severe penalties for those who engage in or assist signal theft for commercial purposes. The 1992 Cable Act demonstrates continued

^{11/} While the cable industry's obligation to protect programmers and subscribers has not diminished, its resources to do so may have. The Commission itself acknowledges that losses due to signal theft have become of increasing concern to cable operators because of the rate regulation provisions of the 1992 Cable Act. NOI at 6, n. 14.

^{12/} Cable Communications Policy Act of 1984, Pub. L. No. 98-549. 98 Stat. 2779 (1984) (the "1984 Cable Act").

Congressional concern with this problem by increasing the penalties for commercial theft as well as making it a felony.^{13/}

The legislative history to the 1984 Cable Act clearly states Congress' position on this issue:

Theft of cable service poses a major threat to the economic viability of cable operators and cable programmers, and creates unfair burdens on cable subscribers who are forced to subsidize the benefits that other individuals are getting by receiving cable service without paying for it.^{14/}

Congressional concern with the problem runs so deep that the 1984 Cable Act explicitly stated that it did not preempt local or state laws dealing with the same crime.^{15/} As the legislative history of the 1984 Cable Act further states: "[T]his problem is of such severity that the Federal penalties and remedies herein must be available in all jurisdictions (and enforceable in state or Federal court) as part of the arsenal necessary to combat this threat."^{16/}

^{13/} Section 21 of the 1992 Cable Act doubled the existing penalties for commercial theft. Fines of up to \$50,000 and prison terms of up to 2 years may be imposed for first-time offenders. Repeat offenders now face up to 5 years in prison and a \$100,000 fine.

^{14/} House Report on the 1984 Cable Act, H.R. Report 98-934, p. 83.

^{15/} "Nothing . . . shall prevent any State or franchising authority from enacting or enforcing laws, consistent with this section, regarding the unauthorized interception or reception of any cable service or other communications service." 47 U.S.C. Section 553(c)(2)(D).

^{16/} H.R. Report 98-934, p. 84.

- C. The Commission Must Recognize That Cable Operators Bear the Burden of Non-Compatibility Between Consumer Electronics and Cable Security Technology.

Cable operators, while very sensitive to signal security issues, are also keenly aware of subscriber

compatible" or "cable ready," as used by the electronics store salesperson, are misnomers.^{18/}

D. Increased Programming Diversity and Channel Capacity Will Heighten the Need for Flexible Security Approaches.

As the cable industry develops in the direction of greater program diversity and increased channel capacity, the Commission should recognize the appropriateness of "situational solutions" and, at the same time, afford operators significant flexibility in choosing among the several security technologies currently available. New program delivery and marketing approaches such as Impulse Pay-Per-View ("IPPV") and Near Video On Demand ("NVOD") will put increased demands on operators for flexible and effective signal security. If operators are to serve the growing consumer demand for diversity in programming, the technology must facilitate, not hinder, consumer choice.

To guard against signal theft, the industry must take steps to secure programming services from unauthorized use. Control over access to programming may be achieved in a number of ways. And each methodology has its own

^{18/} Consumers have been so conditioned by TV and VCR sales personnel and retail advertising that a variety of terms can easily stand in for the phrases "cable ready" and "cable compatible." Designations such as "cable friendly" or "advanced tuning" are sufficient to conjure up the impression of complete compatibility in the minds of hopeful consumers. Indeed, even an otherwise accurate reference to "100+ channels" would likely be enough to create such an impression.

advantages and disadvantages, both in terms of initial and ongoing costs and the level of security achieved. Each methodology may also impose its own set of technical issues vis-a-vis consumer TVs and VCRs.

As discussed in greater detail in the joint NCTA/EIA comments, the security mechanisms currently used, either alone or in some combination, include positive and negative traps, addressable descrambling and, to a much lesser degree, interdiction. In addition, there are several technologies in development such as broadband scrambling and Point Of Entry ("POE") configurations.^{19/}

Much has been made of the need for "clear signal" technologies -- such as trapping and interdiction -- that deliver unscrambled signals to a TV or VCR's tuner. NCTA wishes to emphasize that, while appropriately cautious of untested claims, the cable industry is open to any alternative that offers real promise. In fact, the cable industry has been at the forefront in terms of exploring and

^{19/} Cable operators often use a combination of these techniques depending on tier configuration and program service penetration level. Positive traps, which remove interfering carriers (thus allowing a subscriber to view the channel), are used for low penetration services with stable subscriber bases. Negative traps, which remove the desired channel, are used for high penetration services (such as HBO), again with stable subscriber bases. Interdiction uses a jamming technology to impair a number of signals just prior to entry into a subscriber's home. NCTA estimates that interdiction is currently used in less than 80,000 subscriber homes nationwide.

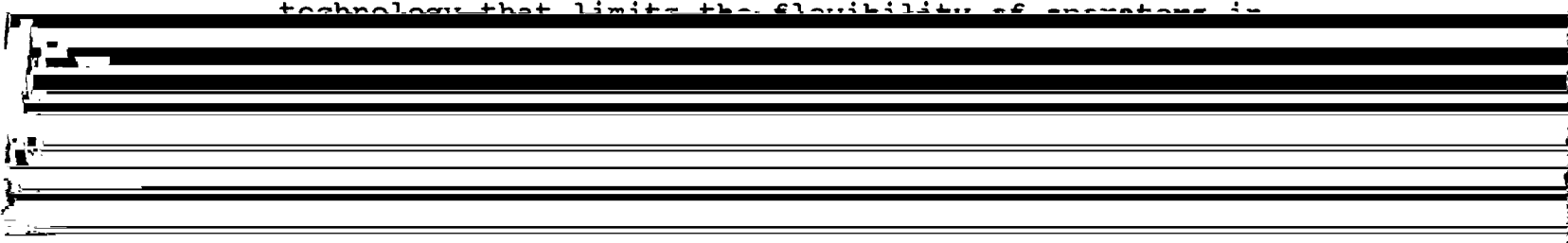
utilizing "clear signal" security and other potentially effective technology such as multichannel scrambling. To date, however, the rigors of the marketplace -- and the uncertainties of the laboratory -- have pointed cable in the direction of scrambling as the most valuable of the currently available (or even soon to be available) technologies.

From a cable operator's standpoint, addressable descrambling provides the most flexible, cost effective means of preventing signal theft while ensuring that subscribers have the opportunity to purchase the programming

encrypted signal, scrambling allows an operator to pair the costs incurred in delivering the optional service with the revenues obtained.^{21/} Second, because a cable operator only has to install one converter/descrambler, regardless of the number of scrambled channels the subscriber wishes to receive, the technology is not "channel incremental."^{22/} Channel incremental technology (such as trapping) requires an operator to send an installer to a subscriber's residence to add or take away equipment whenever the subscriber desires to add or delete a secured channel from its cable service. These demands on a cable operator do not facilitate an increase in diversity and program choice, which is the direction the cable industry must move in order to meet subscriber demand. In addition, certain provisions

^{21/} In contrast, negative traps, which are frequency filters which eliminate signals from a subscriber's channel lineup, have the opposite effect. A cable operator must install a negative trap everywhere except the source of revenue.

^{22/} Again, traps (both positive and negative) provide a sharp contrast. As subscribers increase the number of secured services they wish to view, more traps must be installed (or removed, depending on the kind of trap). Traps are precisely the kind of "channel incremental" technology that limits the flexibility of operators in



of the newly passed 1992 Cable Act will require enhanced flexibility on the part of cable operators.^{23/}

E. Cable Operator Obligations Under The 1992 Cable Act Encourage the Widespread Application of Scrambling Technology.

In addition to the economic benefits provided by addressable descrambling, several provisions of the 1992 Cable Act will encourage cable operators in the future to implement this technology to secure their signals. The cost of compliance for cable operators is investment in flexible security technology.

By design, the strict parameters for regulating the rates for basic cable service, as set forth in the 1992

cost-effective method of configuring and securing such non-basic tier services.

In addition to rate re-regulation, the must-carry^{24/} and retransmission consent^{25/} provisions of the 1992 Cable Act will likely have a significant impact upon the security technology a cable operator utilizes. Under these provisions, local broadcasters will have the option every three years of selecting must carry status (which carries with it on-air channel positioning) or retransmission consent. If, for example, a local broadcaster elects must carry status and the broadcast channel is currently occupied by a trapped premium service, the operator must retrap its entire system to accommodate this one change, both a capital and labor intensive exercise.

Under the must carry/retransmission consent provisions, a cable operator faces a potentially disruptive reshuffling of its entire channel lineup every three years. Beyond massive subscriber inconvenience, the cost of physically replacing or resetting traps in each household could be staggering.

24/ Sections 4 and 5 of the 1992 Cable Act.

25/ Section 6 of the 1992 Cable Act.

Similarly, the anti-buy through provisions of the 1992 Cable Act^{26/} are likely to force cable operators to adopt addressable scrambling as their primary security technology. Section 3 of the 1992 Cable Act requires cable operators with the technical capability to do so to offer per-program or per-channel programming to basic only subscribers, and prohibits operators from requiring these subscribers to take an intermediate, or "expanded basic," tier to receive such programming. Without scrambling, operators that want to offer a broadcast/PEG "basic only" tier to subscribers without the use of a converter box will likely have to use three to four traps, depending on the number of premium services the subscriber takes. Utilizing this number of traps creates severe mechanical stability as well as signal loss problems for the cable operator.^{27/}

In summary, subscriber demands for increased programming diversity, new marketing strategies to meet those demands and obligations imposed by the 1992 Cable Act have created enormous pressures on cable operators to employ

^{26/} Section 3 of the 1992 Cable Act.

^{27/} Of the three to four traps required, one (actually a low-pass filter) allows the subscriber to receive channels 2 - 13; a second, "mid-band," trap blocks reception to cable channels 14 - 21 (actually located between channels 6 and 7 of the low-band) where operators will likely carry non-basic services. Finally, one or two additional traps will be required to permit viewing of premium services such as HBO or Showtime.

admissible assemblies as the minimum required technology